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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/599,674

10/05/2006

Armin Schrepfer

SCHREPFER

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EXAMINER

RO, BENTSU

ART UNIT

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2837

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/599,674	Applicant(s) SCHREPFER, ARMIN	
	Examiner /BENTSU RO/	Art Unit 2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16, 17, 25 and 26 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 7, 8, 10, 12-14, 19 and 23 is/are rejected.
- 7) ☒ Claim(s) 3-6, 9, 11, 15, 18, 20-22 and 24 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>2007-07-10</u> . | 6) <input type="checkbox"/> Other: ____. |

FIRST OFFICE ACTION ----- A NONFINAL REJECTION

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 7, 19, 23, 10, 12 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over applicant cited reference Japanese Published Patent Application H10-14159. See the following explanation chart. (This JP-14159 reference is cited by applicant.)

Examiner's note: The examiner does not have a complete translation of this reference, however, the abstract alone is sufficient for making the rejection because the claims are unduly broad.

The claims:	JP-14159 teaching:
1. (Currently amended) A compensation apparatus for prevention of damaging bearing currents in an electrical machine having at least one winding,	Fig. 1 shows a compensation circuit for prevention of damaging bearing currents in an electric motor; Fig. 1 shows a motor stator winding 5;

a housing and a rotor,	Fig. 1 shows a frame 6 and a rotor 2;
<p>said apparatus comprising:</p> <p>a connection device adapted to connect to at least one winding,</p> <p>to the housing and to the rotor of the electrical machine; and</p> <p>a voltage production device</p> <p>adapted to produce a compensation voltage for the rotor of the electrical machine</p> <p>as a function of an operating voltage which is applied to the at least one winding of the electrical machine.</p>	<p>Fig. 1 shows an inverter 10; the inverter 10 provides PWM power to the motor winding, therefore, the inverter is connected to the motor winding 5;</p> <p>as shown in Fig. 1 the closed current circuit 11 (or the current loop I_j), the current loop and the closed current circuit both pass through motor shaft 3 and the motor frame 6;</p> <p>further, one terminal of the inverter 10 is connected to the ground and to the frame 6;</p> <p>the frame 6 holds the shaft 3, the rotor 2 mounts onto the shaft 3, thus, the ground terminal of the inverter 10 is connected to the ground, to the frame, to the shaft, and to the rotor;</p> <p>in fact, the inverter's ground terminal, the motor frame, the motor shaft, and the motor rotor are all connected together at least by the metal part of the frame;</p> <p>the motor stator winding 5 and the ground together constitute a voltage production device;</p> <p>the ripple voltage V_r is a compensation voltage, see the "SOLUTION" in the "ABSTRACT";</p> <p>the ripple voltage V_r functioned as a "power source", so that the shaft current I_j flowing to the bearing 4 is reduced, see line 3 of the "SOLUTION";</p> <p>the ripple voltage V_r is obtained from the stator winding 5, therefore, the ripple voltage V_r is a function of the operating</p>

	voltage of the inverter and also is a function of the electrical machine (the motor).
2. (Currently amended) The compensation apparatus of claim 1, wherein the operating voltage applied to the winding is obtained from drive signals of a voltage intermediate-circuit converter of the electrical machine.	the inverter 10 provides PWM power to the motor winding 5, the inverter 10 also receives power from a dc link (not shown in Fig. 1); the dc link having a dc voltage, this dc voltage is obtained from a rectifier, an ac/dc converter or from a battery.
7 and 10.	similar to claim 1.
19.	similar to claim 2.
12. (and similar 23.) The method of claim 10, wherein the compensation voltage is produced by an active circuit.	the ripple voltage produced between the motor winding and ground, thus, the motor winding to the ground is an active circuit.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 8 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP-14159.

Albeit not clearly shown, most inverters provide three-phase power to the three-phase motors. Thus, the three-phase motor is considered obvious in view of the inverter-motor combination.

6. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP-14159 as applied to claim 10 above, and further in view of Chenggang Mei et al IEEE publication entitled "Minimization and Cancellation of Common-Mode Currents, Shaft Voltages and Bearing Currents for Induction Motor Drives". (This reference is cited by applicant.)

As clearly shown in the Mei's publication, the bearing current is a common-mode voltage (or current) therefore, the cancellation voltage (or current) must be a common-mode voltage (or current).

7. Claims 3, 4, 5, 18, 6, 9, 20, 21, 22, 24, 11, 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Claims 16, 17, 25, 26 are allowable.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

10. Any inquiry concerning this communication should be directed to /BENTSU RO/ at telephone number (571)272-2072.

/BENTSU RO/
Primary Examiner
Art Unit 2837